DETAILED ACTION

Claims 1-12 have been cancelled. **Claims 13-29** are still pending in the application.

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s)

of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness
      or nonobviousness.

This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 13-29 rejected under 35 U.S.C. 103(a) as being unpatentable over **Rohani (US**

6,195,342) in view of **Bonta (US 2002/0077103)** and in further view of **Parmar et al. (US**

6,725,039 B1; hereinafter Parmar).

Consider **claim 13**, Rohani discloses a method for operating a mobile radio system with a

first group of adjacent radio cells and a second group of adjacent radio cells, the first and second

groups of radio cells being overlaid on each other, comprising:

measuring signal quality from a mobile station, which is operating at a current position in

a first radio cell of the first group, to other radio cells of the first group that are adjacent to the

first cell (col. 1, lines 38-46; col. 2, lines 37-50; determining candidate pilot signals according to

location of mobile station); and

determining which of other radio cells of the first group has the best signal quality for the

current position of the mobile station (figure 1; col. 2, line 50 to col. 3, line 4; col. 4, lines 9-44;

predetermined priority candidate lists).

Rohani discloses a mobile station located in a cell area transmits a Pilot Strength

Measurement Message which includes a Neighbor Set of a list of a hand-off candidate base

stations, the list is substantially reduced to include only a few of the adjacent base stations

(figure 4; col. 5, line 52 to col. 6, line 28). However, Rohani fails to specifically disclose

identifying a sub-group of radio cells from the second group based on which radio cell of the

first group has the best signal quality; and measuring signal quality from the mobile station to the

sub-group of radio cells from the second group but not to other radio cells of the second group

that are not included in the subgroup and that the first and the second groups of radio cells

belong to a different mobile radio network.

In related art, Bonta discloses identifying a sub-group of radio cells from the second

group based on which radio cell of the first group has the best signal quality (figure 2;

paragraphs 23-26; A neighbor list is optimized for grid element 17 to include only neighbors VI

and VII rather than being tied to serving cell I.); and

measuring signal quality from the mobile station to the sub-group of radio cells from the

second group but not to other radio cells of the second group that are not included in the

subgroup (figure 2; paragraphs 23-26; The small optimal neighbor lists assignments for each grid

element 16-20 is determined by the mobile based on pilot measurements that exceed an add-

threshold level.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate the teachings of Bonta into the teachings of Rohani to generate and

assign an optimal neighbor list based on the actual location of the mobile station.

Furthermore, in related art, Parmar discloses a method for operating a mobile radio

system with a first group of adjacent radio cells and a second group of adjacent radio cells, the

first and the second group of radio cells belonging to different mobile radio networks. (abstract;

col. 1, lines 42-59; processing a handover request with GSM parameters from a BSC to a RNC

of the UMTS core network.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention to incorporate the teachings of Parmar into the teachings of Rohani and Bonta to

reduce processing load in the network and enables the RNC to allocate the optimum UTRAN

resources for the call.

Consider **claim 29**, Rohani discloses a device to determine a sub-group of adjacent radio

cells in a mobile radio system with a first group of adjacent radio cells and a second group of

adjacent radio cells, the first and second groups of radio cells being overlaid on each other,

comprising:

a first measurement unit to measure signal quality from a mobile station, which is

operating at a current position in a first radio cell of the first group, to other radio cells of the first

group that are adjacent to the first cell (col. 1, lines 38-46; col. 2, lines 37-50; determining

candidate pilot signals according to location of mobile station);

a determination unit to determine which of other radio cells of the first group has the best

signal quality for the current position of the mobile station (figure 1; col. 2, line 50 to col. 3, line

4; col. 4, lines 9-44; predetermined priority candidate lists);

Rohani discloses a mobile station located in a cell area transmits a Pilot Strength

Measurement Message which includes a Neighbor Set of a list of a hand-off candidate base

stations, the list is substantially reduced to include only a few of the adjacent base stations

(figure 4; col. 5, line 52 to col. 6, line 28). However, Rohani fails to specifically disclose an

identification unit to identify a sub-group of radio cells from the second group based on which

radio cell of the first group has the best signal quality; and a second measurement unit to

measure signal quality from the mobile station to the sub-group of radio cells from the second group but not to other radio cells of the second group that are not included in the subgroup that the first and the second groups of radio cells belong to a different mobile radio network.

In related art, Bonta discloses identification unit to identify a sub-group of radio cells from the second group based on which radio cell of the first group has the best signal quality (figure 2; paragraphs 23-26; A neighbor list is optimized for grid element 17 to include only neighbors VI and VII rather than being tied to serving cell I.); and

a second measurement unit to measure signal quality from the mobile station to the sub-group of radio cells from the second group but not to other radio cells of the second group that are not included in the subgroup (figure 2; paragraphs 23-26; The small optimal neighbor lists assignments for each grid element 16-20 is determined by the mobile based on pilot measurements that exceed an add-threshold level.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Bonta into the teachings of Rohani to generate and assign an optimal neighbor list based on the actual location of the mobile station.

Furthermore, in related art, Parmar discloses a method for operating a mobile radio system with a first group of adjacent radio cells and a second group of adjacent radio cells, the first and the second group of radio cells belonging to different mobile radio networks. (abstract; col. 1, lines 42-59; processing a handover request with GSM parameters from a BSC to a RNC of the UMTS core network.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Parmar into the teachings of Rohani and Bonta to

reduce processing load in the network and enables the RNC to allocate the optimum UTRAN
resources for the call.

Consider **claim 14**, and **as applied to claim 13 above**, Rohani, as modified by Bonta and
Parmar, discloses the claimed invention wherein the radio cells of the second group are smaller
than the radio cells of the first group. (Bonta: paragraph 26; optimal neighbor lists will be small)

Consider **claim 15**, and **as applied to claim 13 above**, Rohani, as modified by Bonta and
Parmar, discloses the claimed invention wherein the radio cells of the first group are operated in
a different frequency range from radio cells of the second group. (Rohani: col. 1, lines 25-33)

Consider **claim 16**, and **as applied to claim 13 above**, Rohani, as modified by Bonta and
Parmar, discloses the claimed invention wherein if the current position of the mobile station
changes, a new sub-group of radio cells from the second group is identified before measuring
signal quality to radio cells of the second group. (Bonta: paragraphs 23-26)

Consider **claim 17**, and **as applied to claim 13 above**, Rohani, as modified by Bonta and
Parmar, discloses the claimed invention wherein the sub-group of radio cells from the second
group is identified based on sub-group information describing which radio cells of the second
group have a close relationship with the radio cell of the first group which has the best signal
quality (Bonta: figure 2; paragraphs 23-26), and

the base station of the first radio cell transmits the sub-group information to the mobile

station. (Rohani: figure 1; col. 4, lines 9-44; col. 4, lines 45-67; Bonta: paragraphs 23-26)

Consider **claim 18**, and **as applied to claim 17 above**, Rohani, as modified by Bonta and

Parmar, discloses the claimed invention wherein the sub-group information specifies different

sub-groups of radio cells from the second group for different radio cells of the first group (Bonta:

figure 2; paragraphs 23-26),

the mobile station determines its actual position within the first radio cell and determines

which of the other radio cells of the first group has the best signal quality for the actual position

(Rohani: col. 2, line 41 to col. 3, line 4; col. 4, lines 9-44), and

the mobile station identifies the sub-group from the determined position and the sub-

group information. (Bonta: figure 2; paragraphs 23-26)

Consider **claim 19**, and **as applied to claim 17 above**, Rohani, as modified by Bonta and

Parmar, discloses the claimed invention wherein when the mobile station moves and there is a

change in the radio cell of the first group having the best signal quality, new sub-group

information is generated and transmitted from the base station of the first radio cell to the mobile

station. (Rohani: figures 3-4; col. 5, line 52 to col. 6, line 29; Bonta: figure 2; paragraphs 23-26)

Consider **claim 20**, and **as applied to claim 17 above**, Rohani, as modified by Bonta and

Parmar, discloses the claimed invention wherein the base station of the first radio cell uses a

directional antenna to transmit the sub-group information. (Rohani: figure 1; col. 4, lines 9-44)

Consider **claim 21**, and **as applied to claim 13 above**, Rohani, as modified by Bonta and Parmar, discloses the claimed invention wherein each radio cell is served by a base station (Rohani: figures 3-4; Bonta: figure 2), and

signal quality measurements are taken from the mobile station to the base stations serving the respective radio cells (Rohani: col. 4, lines 9-44; Bonta: paragraphs 23-26).

Consider **claim 22**, and **as applied to claim 21 above**, Rohani, as modified by Bonta and Parmar, discloses the claimed invention wherein for a least a portion of the radio cells, a single base station served two or more radio cells (Rohani: figures 3-4; Bonta: figure 2).

Consider **claim 23**, and **as applied to claim 14 above**, Rohani, as modified by Bonta and Parmar, discloses the claimed invention wherein the radio cells of the first group are operated in a different frequency range from radio cells of the second group. (Rohani: col. 1, lines 25-33)

Consider **claim 24**, and **as applied to claim 23 above**, Rohani, as modified by Bonta and Parmar, discloses the claimed invention wherein if the current position of the mobile station changes, a new sub-group of radio cells from the second group is identified before measuring signal quality to radio cells of the second group. (Bonta: paragraphs 23-26)

Consider **claim 25**, and **as applied to claim 13 above**, Rohani, as modified by Bonta and Parmar, discloses the claimed invention wherein the sub-group of radio cells from the second group is identified based on sub-group information describing which radio cells of the second group have a close relationship with the radio cell of the first group which has the best signal quality (Bonta: figure 2; paragraphs 23-26), and

the base station of the first radio cell transmits the sub-group information to the mobile station. (Rohani: figure 1; col. 4, lines 9-44; col. 4, lines 45-67; Bonta: paragraphs 23-26)

Consider **claim 26**, and **as applied to claim 25 above**, Rohani, as modified by Bonta and Parmar, discloses the claimed invention wherein the sub-group information specifies different sub-groups of radio cells from the second group for different radio cells of the first group, (Bonta: figure 2; paragraphs 23-26),

the mobile station determines its actual position within the first radio cell and determines which of the other radio cells of the first group has the best signal quality for the actual position, (Rohani: col. 2, line 41 to col. 3, line 4; col. 4, lines 9-44) and

the mobile station identifies the sub-group from the determined position and the sub-group information. (Bonta: figure 2; paragraphs 23-26)

Consider **claim 27**, and **as applied to claim 25 above**, Rohani, as modified by Bonta and Parmar, discloses the claimed invention wherein when the mobile station moves and there is a change in the radio cell of the first group having the best signal quality, new sub-group information is generated and transmitted from the base station of the first radio cell to the mobile

station. (Rohani: figures 3-4; col. 5, line 52 to col. 6, line 29; Bonta: figure 2; paragraphs 23-26)

Consider **claim 28**, and **as applied to claim 25 above**, Rohani, as modified by Bonta and

Parmar, discloses the claimed invention wherein the base station of the first radio cell uses a

directional antenna to transmit the sub-group information. (Rohani: figure 1; col. 4, lines 9-44)

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

            Commissioner for Patents
            P.O. Box 1450
            Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

> Customer Service Window
> Randolph Building
> 401 Dulany Street
> Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Bobbak Safaipour whose telephone number is (571) 270-1092. The Examiner can normally be reached on Monday-Friday from 9:00am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Matthew Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

/Bobbak Safaipour/
Examiner, Art Unit 2618

June 16, 2008

/Matthew D. Anderson/

Supervisory Patent Examiner, Art Unit 2618